

AMENDMENTS TO THE SPECIFICATION:

Please amend the caption on page 1, line 7, as follows:

BACKGROUND AND SUMMARY OF THE INVENTION

Please amend the paragraphs beginning at page 4, line 23, and continuing to page 6, line 5, as follows:

The ~~present invention~~ technology disclosed herein provides a highly efficient way of ensuring that handoffs from third generation systems to multiple different kinds of second generation systems is done efficiently and without disruption. Thus, for example, third generation UMTS systems can ensure communication with any kind of second generation system, including DAMPS, GSM, PDC, etc.

In accordance with a preferred ~~example~~ embodiment of the invention, a generic mechanism is provided to accommodate inter-system handovers between third generation systems and any other type of system including any type of second generation system. The generic mechanism includes a standardized data “container” structure that will include whatever information is necessary to specify a communication to a neighboring cell system in the communication language (whether common or foreign) of that neighboring cell system. Thus, for example, if a handover to a GSM neighboring cell is to occur, the container may specify the communication parameters for a GSM transmission. On the other hand, if the neighboring cell is PDC specific, the container may specify the communication parameters for a PDC transmission. Any other types of third, second, first, or other communication parameters can also be specified in the container. Using the container, the recipient of the handover can specify the communication parameters to the mobile radio, and the mobile radio can specify its capabilities to the neighboring cell using the proper parameters. Importantly, the current cell (for example, third generation) need not read and interpret the content of the particular second generation parameters in the container, provided it simply delivers the container to the neighboring cell for evaluation. In this way, the third generation system

need not understand all previous generation protocols and the recipient second (or first) generation system is fooled into believing that it is communicating with another second (or first) generation system.

Please amend the paragraph beginning at page 6, line 18, and continuing to page 6, line 19, as follows:

FIGURE 2 is a communication sequence depiction in accordance with a preferred example embodiment of the present invention;

Please amend the caption on page 9, lines 1 - 2, as follows:

~~DETAILED DESCRIPTION OF THE PRESENTLY PREFERRED
EMBODIMENT~~

Please amend the paragraph beginning at page 9, line 4, and continuing to page 10, line 9, as follows:

The following example embodiment is described with respect to second generation systems such as GSM and PDC and third generation systems such as UMTS. However, the fundamental aspects of the present inventiontechnology disclosed herein are more generically applicable to all kinds of foreign system handovers. The preferred embodiment of the technology disclosed hereinpresent invention is employed in combination with multi-mode mobile phones, i.e., mobile phones capable of communicating with at least two different types of mobile phone systems under corresponding multiple different types of communication protocol standards. Such multi-mode mobile phones can communicate with two or more of, for example, GSM, PDC, UMTS, etc. systems. The preferred example embodiment of the technology disclosed hereinpresent invention will have equal applicability to all types of multi-mode mobile phones presently available and developed in the future. That is, the technology disclosed hereinpresent invention provides a generic mechanism for intersystem handover,

regardless of the communication protocol specification of the systems involved in the handover, or the type of multi-mode mobile radio employed.

A preferred example embodiment of the technology disclosed hereinpresent invention involves a generic mechanism to provide intersystem handovers between a UMTS system and a GSM or PDC system. This occurs when, for example, a mobile phone in a UMTS service area is handed over to a cell being supported by a GSM or PDC system. In such a case, the dual- (or multi-) mode mobile phone communicates with the UMTS system in accordance with UMTS protocols and is also capable of communicating with the GSM and PDC systems in accordance with their respective protocols.

Please amend the paragraphs beginning at page 11, line 21, and continuing to page 13, line 11, as follows:

Figure 1B is a schematic representation of an extension of Figure 1A in which mobile radios communicate with second generation systems, third generation systems, and any other type of cellular system presently available or available in the future. In such cases, the coordination of communication between these systems is made more effective and efficient through use of the technology disclosed hereinpresent invention.

The technology disclosed hereinpresent invention recognizes that the third generation cellular system of, for example Figures 1A and 1B, in order to effectuate a handoff procedure, must be capable of communicating the handoff requirements to and from the disparate cellular systems to which the handoff is occurring. One way to do this is to educate the third generation system about the communication protocols for each and every previous generation cellular system to which handoff may occur. Such a task is daunting given the possible numbers of second generation systems (and other prior systems) to which the third generation cellular system may have to handoff a mobile radio communication.

The technology disclosed hereinpresent invention provides a more generic mechanism that allows system handovers from third generation cellular systems to any other type of system.

There are several different types of communication between the network and the mobile radio that should have the generic support offered by the technology disclosed hereinpresent invention in order to solve the problem identified. In reference to Figure 2, some of these kinds of communications are discussed. With respect to Figure 2, a second generation base station is shown on the left side of the Figure, and a dual-mode (or multi-mode) mobile station is shown on the right. Between the dual-mode mobile station and the second generation base station is the UMTS terrestrial radio access network UTRAN which is servicing the cell in which the mobile stations are currently communicating. In the embodiment shown in Figure 2, the mobile station is preparing to be handed off from the UMTS cell through the core network CN structures to a cell serviced by the second generation base station shown on the left of Figure 2. Thirteen different communications are described in Figure 2 in order to illustrate the generic mechanism used by the technology disclosed hereinpresent invention with respect to certain of these communications.

Please amend the paragraph beginning at page 16, line 1, and continuing to page 16, line 4, as follows:

Steps 9 and 10 could also be via another MSC, in the same or a different network. The technology disclosed hereinpresent invention is not limited to a particular network architecture, e.g. an architecture with MSCs and BSs. This architecture is herein only used as an example.

Please amend the paragraph beginning at page 16, line 14 and continuing to page 17, line 5, as follows:

The presently preferred example embodiment of the invention provides generic support between the third generation and second generation systems of, for example, Figure 2 by providing the generic container mechanisms identified above to support several of the communications described in Figure 2. In particular, non-generational (i.e.,

generic) support is required for the control channel broadcast information (step 1), the mobile capabilities communication (step 3), the neighboring cell information communication (step 4), the cell measurement and reporting instruction (step 5), the cell measurement result communication (step 6), and the handoff command C. In these cases requiring generic support, there is a need for communication between the third generation network in the mobile station regarding information from a foreign system. For example, in Figure 2, if the second generation base station is a GSM system, the UMTS must communicate with the mobile station regarding foreign GSM information.

Please amend the paragraph beginning at page 22, line 6, and continuing to page 22, line 19, as follows:

As can be seen from the depictions in Figures 3 through 14, the preferred example embodiment of the present invention provides a data container having a structure common within third generation systems, second generation systems, etc. in order to transmit foreign data types through any particular system to a destination equipment that can read and understand the information provided in the container. With this embodiment, the third generation system need not consider the contents of the container per se, but can simply hand the contents to the mobile station which can read and understand them as needed. Unlike the mobile station, the third generation network need not have the capability to read or act on the communication protocols of the foreign systems to which handoff is occurring but instead act simply as a conduit to deliver the container of foreign system information to the dual-mode mobile station.

Please amend the paragraph beginning at page 24, line 8, and continuing to page 25, line 1, as follows:

The technology disclosed herein present invention has the advantage that each of the unique mobile radio systems may continue to communicate in its own specification. There is no need for additional data mechanisms to be included into each of the particular

generational systems in order for them to understand the specifications and protocols of prior or subsequent generational systems. Instead, each generational system simply knows to open the container it receives in order to extract the protocol information that it needs for communications. Where a particular generational system does not need the protocol information of a foreign system, it simply transports the container down the communication stream.

The specifications of the container are not particular to the technology disclosed herein ~~in present invention~~ but may be any appropriate data mapping structure provided the structure is generic to all generational systems to which it applies. The contents of the container are, of course, left to the specifications of the particular generational systems in the appropriate cell neighborhoods.